Amendment to the Claims

Cancel claims 1-13.

14. (previously presented) An airport concrete pavement of preset strength safety level and thickness less by 8-10% and 5-10% for critical and non-critical areas of airport, respectively, than the thickness of pavement provided by the current Portland Cement Association Engineering Bulletin EB 50P thickness design procedure, wherein the mix design of concrete of said pavement is determined by the value of 90-day modulus of rupture of concrete (MR) required according to Portland Cement Association Engineering Bulletin EB 50P design procedure and equal to the value of 28-day modulus of rupture increased by 10% according to the Portland Cement Association Engineering Bulletin EB 50P and current design practice;

the value of 28-day modulus of rupture being estimated as the mean value of 28-day flexural strength of concrete, the reduction of thickness being provided by more complete utilization of flexural strength of concrete considered as a random value than that provided by the current Portland Cement Association design practice of utilization of this strength.

15. (previously presented) An airport concrete pavement of claim 14 wherein more complete utilization of flexural strength of concrete is carried out by thickness design according to said Portland Cement Association Engineering Bulletin EB 50P with the consecutive use of a plurality values of modulus of rupture of concrete exceeding the mean value of 90-day flexural strength, strength safety of pavement of reduced thickness corresponding to any of increased values of modulus of rupture being not less than the preset strength safety level required according to the invention, the thickness of said pavement being determined by requirements of fatigue strength, the sufficiency of estimations of thickness of pavement corresponding to these values of modulus of rupture being compared against the results of fatigue analysis of said pavement.

16. (previously presented) An airport concrete pavement of claim 15 wherein more complete utilization of flexural strength of concrete is carried out by the thickness design according to any recognized method chosen by the customer with the consecutive use of a plurality of values of modulus of rupture of concrete exceeding the mean value of 90-day flexural strength, strength safety of pavement of reduced thickness corresponding to any of increased value of modulus of rupture being not less than the preset strength safety level required according to the invention, the thickness of said pavement being determined by requirements of fatigue strength, the sufficiency of estimations of thickness of pavement corresponding to these values of modulus of rupture being compared against the results of fatigue analysis of this pavement.

17. (previously presented) An airport concrete pavement for aprons, taxiways, hard standings, runway ends for distance of 1,000 ft. and hangar floors as critical areas of airport of claim 14 wherein the required preset strength safety level should correspond to the value of strength safety index β equal at least to about 3 and the thickness being less by 8-10% than that provided by the current Portland Cement Association thickness design procedure due to more complete utilization of flexural strength of concrete than that provided by the current Portland Cement Association design practice of utilization of this strength;

more complete utilization of flexural strength of said concrete being provided by the thickness design with the consecutive use of three values of 90-day

modulus of rupture of concrete (MR) with the difference of 50 psi considered corresponding to the one value of 28-day specified compressive strength of this concrete f_c^1, the least of these three values of modulus of rupture being the value of 90-day modulus of rupture (MR) required according to the current Portland Cement Association thickness design procedure and equal to the 90-day mean value of flexural strength of concrete, any of these three values of modulus of rupture of concrete (MR) being used for thickness design of said pavement if estimation of strength safety of pavement of the safety factor in the range from 1.7 to 2.0 designed with the use of this value of modulus of rupture corresponds to the value of strength safety index β equal at least to about 3.

18. (previously presented) An airport concrete pavement for non-critical areas of said airport of claim 14 wherein the preset strength safety level corresponds to the value of strength safety index β equal at least to about 2.5 and the thickness is less by 5-10% than the thickness of said pavement provided by the current Portland Cement Association design procedure due to more complete utilization of flexural strength of concrete than that provided by the current Portland Cement Association design practice of utilization of this strength;

more complete utilization of flexural strength of said concrete being provided by the thickness design with consecutive use of three values of 90-day modulus of rupture of concrete (MR) with the difference of 50 psi considered corresponding to the one value of 28-day specified compressive strength of this concrete f_c^1, the least of these three values of modulus of rupture being the value of 90-day modulus of rupture (MR) required according to the current Portland Cement Association thickness design procedure and equal to the 90-day mean value of flexural strength of concrete;

any of said three values of modulus of rupture of concrete (MR) being used for thickness design of claimed pavement if estimation of strength safety of pavement of the safety factor in the range from 1.5 to 1.7 designed with the use of this value of modulus of rupture corresponds to the value of strength safety index β equal at least to about 2.5.

19. (previously presented) An airport concrete pavement for aprons, taxiways, hard standings, runway ends for distance of approximately 1,000 ft. and hanger floors as critical areas of airport of claim 15 wherein fatigue analysis of pavement regardless of forecast of traffic loads and volumes expected during the pavement's design life is carried out according to the most detailed version of the current Portland Cement Association design procedure.

20. (previously presented) An airport concrete pavement for aprons, taxiways, hard standings, runway ends for distance of approximately 1,000 ft. and hanger floors as critical areas of airport of claim 15 wherein fatigue analysis of pavement regardless of forecast of traffic loads and volumes expected during the pavement's design life is carried out with the use of recognized methods of fatigue analysis according to the requirements of the customer.

21. (previously presented) An airport concrete pavement for runways (central portion) and some high-speed exist taxiways as non-critical areas of airport of claim 15 wherein fatigue analysis of pavement regardless of forecast of traffic loads and volumes expected during the pavement's design is carried out according to the mot detailed version of the current Portland Cement Association design procedure.

22. (previously presented) An airport concrete pavement for runways (central portion) and some high-speed exist taxiways as non-critical areas of airport of claim 15 wherein fatigue analysis of pavement regardless of forecast of traffic loads and volumes expected during the pavement's design is carried out with the use of recognized methods of fatigue analysis according to the requirements of the customer.

23. (previously presented) An airport concrete pavement of claim 14 wherein concrete mix design is determined by the value of 90-day modulus of rupture (MR) required according to Portland Cement Association Engineering Bulletin EB 50P and equal to the mean value of 28-day flexural strength increased by 10%, based on the statistical connections between compressive and flexural strength of concrete following from the processing data of test results of 3,650 series of standard cylinders and beams;

the mean value of flexural strength being estimated as $9.42\sqrt{f_c^1}$ where f_{cr}^1 is the mean value of 28-day compressive strength defined according to American building code ACT 318 as required average 28-day compressive strength and equal to $f_c^1 + 1.34\mathbf{s}$ where f_c^1 and **s** are specified compressive strength and standard deviation of this strength, respectively;

the estimation of 28-day modulus of rupture of concrete being the mean value of flexural strength corresponding to the mean value of compressive strength and the value of the specified compressive strength of this concrete f_c^1, taking into account

the statistical connection between compressive and flexural strength of concrete mix design of concrete of modulus of rupture of required value equal to the mean value of flexural strength of this concrete can be replaced by more convenient mix design of concrete of specified compressive strength f_c^1 corresponding to this value of modulus of rupture.

24. (previously presented) An airport concrete pavement of claim 23 wherein mix design of concrete of 28-day values of modulus of rupture (MR) equal to 550, 600, 650, 700, and 750 is carried out according to the corresponding values of 28-day values of specified compressive strength f_c^1 equal to 3,000, 3,500, 4,000, 4,500, and 5,000 psi, respectively.

25. (new) An existing airport concrete pavement wherein estimation of capacity is carried out with more complete utilization of flexural strength of concrete than that provided according to the Portland Cement Association Engineering Bulletin EB 50P thickness design procedure of utilization of 90-day flexural strength of this concrete of the time of design of this pavement taking into account the age of concrete, according to said Portland Cement Association Engineering Bulletin EB 50P modulus of rupture of 90-day concrete being equal to the mean value of 28-day flexural strength increased by 10%, wherein the mean value of flexural strength of concrete of age three years and more estimated as 120% of 28-day of this concrete, more complete utilization

of flexural strength of concrete being provided by the thickness design of pavement with the consecutive use of three values of modulus of rupture of concrete with the difference of 50 psi considered corresponding to the one value of 28-day specified compressive strength of this concrete f_c^1, the least of these three values of modulus of rupture being the mean value of flexural strength;

wherein the strength safety of pavement of reduced thickness corresponding to any of said increased values of modulus of rupture should at least correspond to the value of strength safety index β equal at least to about 3 and 2.5 as applied to critical and noncritical areas of airport, respectively fatigue analysis of pavement regardless of forecast of traffic loads and volumes expected during the pavement's design life being provided according to the most detail version of said Portland Cement Association Engineering Bulletin EB 50P or other methods of fatigue analysis according to the requirements of the customer.